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Work Among the Trees.

IT is now rather late to plant trees, at least in this latitude and further northward. This does not mean that all trees planted later than this will certainly die, for it is possible to remove them at any time during the winter. Nevertheless, trees set out in late autumn are exposed to unusual dangers. The ground will not have time to settle firmly about the roots, which will be loosened as the top sways in the wind. The tree will be more easily lifted by frost and its hold upon the soft earth will be more insecure in time of a thaw. Even if these dangers are warded off by careful staking, there is the more serious one which threatens the tree from its lack of feeding roots to supply the moisture which the drying winds of winter absorb from trunk and limbs, leaving them shriveled and lifeless. A tree planted in early autumn, in ground thoroughly settled, will throw out roots enough before winter sets in to supply this drain.

Now is the time, however, to prepare for planting next spring. Where trees are to be set, ample pits should be dug, the more ample, the better for the health and beauty of the future trees. A hole three feet deep and twenty feet across is none too spacious for a long-lived tree. Into these excavations the loam taken out should be returned, together with enough peat or good soil added and thoroughly mixed with it to supply the place of the poor subsoil, hard-pan and stones which should be rejected. This will settle into a firm bed for the roots of the young trees next spring, when they are placed in the shallow hole, which can then be quickly dug in the centre of the large one. If the young trees have not already been secured and heeled in for the winter, they should be bought now and placed in a cold pit or cellar. It is bad practice to wait until spring to select nursery stock, for at that time the nurserymen are overwhelmed with orders, and they cannot give proper attention to the lifting and packing of their stock.

Planting in spring is half done when it is well begun in autumn. This is an important point gained in tree planting, for time at that season is precious here in the cold north, when the great volume of vegetable life, liberated by a few days of sunshine, rushes all at once into full activity. To take advantage of this sudden change from winter into summer, everything must be in readiness at the first moment when the ground is dry enough to work and the weather will permit it. No matter how thoroughly we prepare for this season, the working days of spring will be found too few and too short for all the operations which must be crowded into them, and the prudent planter will leave nothing undone which will lessen or facilitate his labors then.

But care for growing trees is quite as essential as the planting of new ones; indeed, as has been often repeated, time and labor are worse than wasted in planting unless the after care is intelligent, determined, ceaseless. Now is the best time for pruning trees, before work among them is rendered unpleasant and unsafe by extreme weather, and perhaps a coating of ice upon the limbs. Many deciduous trees, which seem to be going into decline, can be started into new life by a judicious cutting away of dead or dying branches; but the limbs should invariably be cut back even with the surface of the trunk and the wound should be covered with coal-tar.

This is the season, too, for studying plantations and marking for removal trees which are injuring their more valuable neighbors. No tree can attain its full stature or its noblest expression or have a reasonable hope of longevity unless it is fully exposed to the influence of air and sunshine. Most of our parks and gardens are disfigured by trees which have been dwarfed or starved or forced out of shape by aggressive neighbors. Planting for immediate effect means overcrowding usually, and when the saplings begin to struggle with each other for the mastery, delay is fatal, for they will begin at once to spindle up or bend away toward the light, and soon all will be deformed past remedy.

These autumn days can be used to no better purpose by one who has trees, or hopes to have them, than by a thorough study of his grounds before the snow covers them, a thorough preparation for getting through the spring work without hurry, and a resolute use of the axe wherever thinning out or tree-surgery is needed.

We have spoken of autumn as a season of preparation for work among the trees, and we might have added that no time is more suitable for making plans for next year's operations in every part of the garden and grounds. Now that the summer vegetation is cleared away, the entire place can be studied, and any desirable changes in the general design can be mapped out. But just at this point a word of caution should be spoken. Do not attempt too much. Do not undertake to cultivate too much ground. Do not try to grow too great a variety of plants. There is more pleasure and more profit in cultivating a small garden thoroughly well and in getting the most out of it than can be had from a large piece of ground half cultivated. It is a common mistake to undertake more than can be thoroughly well done. Every man who cultivates a garden, whether he is rich or poor, suffers from this national tendency. We want to grow everything, and a great deal of it, and the result is that nothing is well done and men rarely get the satisfaction from their gardens which their expenditure of labor and energy and money entitles them to. No one man, whatever his resources may be, can grow all sorts of plants well, or get from them all they are capable of. The men who derive the greatest pleasure from gardening are those who grow a few plants, and study thoroughly their needs and habits and learn all about them. And it is such men, specialists, perhaps, they should be called, who advance horticulture, and who, in getting the most for themselves out of their gardens, do the most to increase knowledge and so to advance the interests of the community. It is due to the specialists from Dean Herbert to the intelligent men of the present day who are satisfied with growing and studying one class of plants, wringing from them all their

secrets, that modern horticulture has reached its present state of development.

Do not attempt too much in the garden or on the farm. Do not undertake more than can be done thoroughly well. There will be pleasure and profit in following this piece of advice.

The Art of Gardening—An Historical Sketch.

XIII.—Roman Country-Seats.

(Continued.)

WHEN we read Pliny the younger's account of his Tuscan country-seat, the strongest impression we receive is of formality—a semi-architectural symmetry. Yet, a little consideration of his words shows that natural beauties—or those which seemed natural—must have played a considerable part in the effect of his domain as a whole. He does not describe them as he does the artificial features, perhaps because he thought it less needful, perhaps because he would have found it more difficult; but his keen appreciation of them is evident, and the same feeling shows in many other passages of his letters. Nor were his formal arrangements inappropriate in the immediate neighborhood of a house so splendid. Nothing, indeed, could be more thoroughly in keeping with the demands of a refined taste than the garden immediately in front of his house, as described in the first passages, which I quoted, were it not for the omnipresence of fantastically clipped trees and shrubs. The presence of such topiary work was, of course, more offensive here, where a beautiful natural landscape appeared beyond it, than in the smaller enclosures of the *villa urbana*, whence little was visible, very often, except the neighboring gardens. But we may feel sure that in any place a Greek would have protested against it, and so, too, did many Latin poets. Nevertheless, it was greatly loved in ancient Italy, and was, doubtless, the offspring of local taste. The records of Egypt tell, indeed, of clipped trees and of shorn hedges along the borders of the roads;* but the severity of Egyptian taste would hardly tolerate anything beyond spherical, columnar or other simple shapes, harmonious with the architectural forms about them, while the Romans had hunting scenes, ships, climbing serpents, and a whole gallery of like fantastic forms.

Villas, still more splendid than Pliny's, were scattered throughout the length and breadth of Italy, thickly bordering the sea-coast north and south of Rome, dotting the slopes of the Apennines, and nestling by the shores of Como and Garda. So numerous did they become, and so vast were the spaces occupied by their ornamental grounds, even in the time of Cicero, that he complained that no fields would be left for the husbandman to till, and Seneca cried: "There is not a hill which is not covered with your gardens, that is not encircled by your parks, nor far and near a lake where the roofs of Roman grandees do not rise." Nor does Pliny's description give us a complete idea of the extravagance displayed in these pleasure-grounds, and severely satirized by many moralists. He does not speak of their great *vivaria* and aviaries, their costly green-houses, and parterres of colored flowers, nor of the magnificence often attained in the water-works which formed all kinds of fountains and cascades, and even turned clocks and ran organs that yielded sweet music. The chief gardener was called the *topiarius*, so great was the love for clipped trees and shrubs; but an *aquarius* had special charge of the water-works, and innumerable lesser officials attended to the utilitarian parts of the domain. The *topiarius* is the only one whom Pliny the Elder dignifies by the name of "artist." The fact that the actual designer of the grounds is not specialized leads us to believe that the architect laid them out when he built the house, and their character well supports the assumption.

Sometimes we can understand an almost wholly formal arrangement of the pleasure-gardens; but the larger they were, the more features of a natural sort, of course, they were likely to contain, and after a while there seems to have been at least a partial reaction against symmetry and stiffness. One is inclined to fancy that it may have been brought about by the protests of the poets, as was the similar reaction in northern Europe in the eighteenth century. Here, as in the urban pleasure-ground, Nero again appears as the exponent of a taste for natural loveliness. A villa which he possessed in the Apennines, and which was excavated not long ago by Professor Lanciani, lay in a wild gorge, cut by the Anio, which fell in three cascades into the valley below. Dams retained the water in three large lakes, but their artificiality was not apparent, and from the domain as a whole "art had been thoroughly banished," says the explorer, "and everything left to the free play of nature." Hunting-ledges stood on either side of the gorge, connected together by a daring bridge, and the lakes were overshadowed by great rocks and enormous Oaks. Indeed, as time went on, a truly romantic feeling for wild mountain scenery seems to have developed in these Romans, satiated with symmetrical splendors. Trajan built himself a hunting-lodge high above Nero's, at the very source of the Anio, 3,200 feet above the sea-level, where the prospect was of alpine grandeur and variety; and the ruins on the top of Mount Etna are believed to be those of a villa built by Hadrian, 3,631 feet higher than the summit of the Rigi, 3,277 feet higher than the summit of Mount Washington.*

No place was more famous for its multitude of splendid country-seats than Tibur, the modern Tivoli. Here lay Cicero's estate, with winter and summer dwellings, great baths, now with hot water and again with cold, two gymnasiums after the Grecian pattern, numerous basins and grottoes, and water-works so well supplied that he jestingly called the place his "Nile." Pompey and Hortensius, Crassus and Brutus and Lucullus were his neighbors, each with a stately domain; and the mother of Augustus, like Tiberius himself, was attracted by the natural beauty and the fashion of the place. In later years came the Emperor, Hadrian, too, creating, a few miles from the modern hamlet, the villa which history still ranks among the wonders of the world. It is now a mass of almost undecipherable ruins, but its circuit can be traced for about half a dozen miles; and though some modern pleasure-grounds have been even larger than this, none of them can give us a true idea of the splendor of Hadrian's home. No accurate description has come down to us, but we know that everything that had been attempted elsewhere was here achieved in a more magnificent way. A whole army of artists traveled in the Emperor's service, buying Greek and Egyptian works, or copying originals that could not be purchased, or studying how to imitate them at home. Everything was reproduced, including seven great temples typical of seven different foreign countries, and, to take a striking contrast, the abode of the dead, as poets had pictured it. But the most interesting fact to note is that, amid this multitude of buildings, statues, paintings and formal pleasure-grounds, at least one spot was transformed into the likeness of a romantic natural glen. The famous Vale of Tempe, in Greece, was copied as accurately as human skill could compass. When we remember that this was but the chief among many villas which Hadrian owned, that Tiberius had twelve in various places, and that even private citizens seldom contented themselves with one or two, we gain a faint idea of what the aspect of Italy must have been in the golden days of the imperial power.

The Romans, like the Greeks, learned the lavish use of cut-flowers only in the later years of their national life. The extent to which the cultivation of flowers, and especially of Roses, must, however, then have been carried on, is implied in many familiar anecdotes. Nero's dining-room, for instance, had an ivory ceiling, artfully contrived to shower Roses upon his guests; Heliogabalus caused the floors of his apartments, and even his porticoes, to be thickly strewn with Roses, over which a golden net was stretched to keep the mass in place; and in water-festivals, the surface of the lake was sometimes so closely covered with floating flowers that it wholly disappeared from view. Many large areas in Italy were devoted to the growing of Roses for Rome, and, in winter, whole cargoes were imported from Egypt. It would be interesting to know what methods were used to keep them fresh on the long journey.†

The Violet, Narcissus, Gladiolus, Lily, Hyacinth, Iris, Crocus, Amaranth and Poppy were especially common in Roman gardens—the Lily, by Pliny's witness, being esteemed next to the Rose. But their list of flowers was very short, indeed, compared with ours, and the gardener must have been chiefly occupied in arranging his materials well, not, as too often to-day, in increasing their variety.‡

New York. *M. G. Van Rensselaer.*

* Ebers: "An Egyptian Princess." This book, like those of Becker, is a romance, but its author is prominent among the Egyptologists of our day.

* Lanciani: "Ancient Rome in the Light of Modern Discoveries."

† Pliny speaks of garlands being brought from India, and even from countries further to the eastward, but it must be thought that these were of artificial flowers, and the idea is borne out by his statement, that no Rose-garlands were at all esteemed in his day unless entirely composed of petals sewn together with the needle, while the "most refined" custom of all was to "present garlands composed of nard leaves or of silk of divers colors steeped in unguents."

‡ Wuestemann is the best authority on the horticulture of the ancients. I have been unable to obtain his books, but Becker quotes freely from them in the notes to his "Gallus." See, also, De Candolle's "Origin of Cultivated Plants."

Autumn Colors of Foliage.

THE brilliant autumn coloring of many of the trees and shrubs in New England and the northern states and Canada is very widely known and appreciated; and most Europeans, who are so fortunate as to travel in this country at that season, are filled with the desire to reproduce the same effects at home. But the trees which are so gorgeous when the first frost appears here are said to lose much of their native bright autumn effect when transplanted to the gardens of Europe. Various reasons have been advanced to account for this peculiarity, the most generally accepted being the fact that the climate of eastern North America is much less humid than that of Europe. This certainly appears to be an important point, because the brightness of the coloring in a cool, wet season like the present, when growth has continued until frost, is not at all comparable with that of those years when the autumn is dry and there is an abundance of sunshine.

The early autumn frosts are usually considered an important factor in the production of these crimson and scarlet effects, but much more depends upon whether the season is cool or warm, wet or dry; and soil, situation, exposure, etc., also play a part.

Autumn changes in the color of the leaves are said to be due to the disintegration of the chlorophyll or green coloring matter, and the presence of xanthophyll (yellow), and erythrophyll (red) and other coloring matter within the cells.

Frequent studies and notices of the subject are to be found in foreign works and journals.

Among those most accessible and published in this country may be mentioned the notice by Professor Goodale (Physiological Botany, p. 297), and a study of "The Autumnal Changes in Maple Leaves," by W. K. Martin and S. B. Thomas, in the *Botanical Gazette* for April, 1887. The following statement from the latter (pp. 80, 81) is interesting and comprehensive:

"Chlorophyll, manufactured constantly under the influence of light, is as constantly undergoing decomposition by the metabolism of the cell. Under ordinary conditions, the manufacture of chlorophyll is sufficient to cover up its decomposition, and the leaf retains its green color. Under certain changed conditions, however, such as intense light or diminished vitality, the decomposition of chlorophyll exceeds its manufacture, and xanthophyll (probably one of the products of decomposition) appears. In other words, xanthophyll is being formed all the time, but only becomes apparent when the manufacture of chlorophyll is checked. The condition of intense sunlight gives us the occasional summer yellowness, while to lowered vitality must be attributed the failure of chlorophyll manufacture in the autumn. This lower vitality is brought about by diminution of light, lowering of temperature, and probably causes in the plant itself. The common notion that frost is the cause of autumnal coloration is true only so far as it is one of the causes which tend to diminish the vitality of the plant, and so the manufacture of chlorophyll. Autumnal coloration may take place before any frost. Xanthophyll then stains the chlorophyll masses yellow, which were before stained green by chlorophyll. The red coloration is brought about in a very different way, as erythrophyll is manufactured in the leaf, and stains the cell sap, leaving the chlorophyll masses untouched. This red coloring matter cannot be discovered in any of the crude materials brought into the plant, or in any other part of the leaves, except sometimes in the phlœm regions of the petioles. When the leaf falls and the cell sap evaporates, and the chlorophyll bodies die, the erythrophyll lays hold of the cell wall and solid contents and stains them. In this way dried leaves retain their red color. As erythrophyll is soluble in water, however, contact with moisture will soon cause the most of it to disappear."

An experiment, showing the effect of checking the growth of a plant or a part of it, may be made by girdling young branches of some of our trees or shrubs, which will cause the foliage of the part above the girdle to change color while the remainder of the plant is still green. It is interesting to note the peculiarities of the autumn coloring of different individuals of the same species, which often occur in Maples, Oaks, etc. These individual characteristics usually remain constant year after year; and, as some of them are much more desirable than others, it would be an interesting point to prove that such could be perpetuated by grafting as suggested in a former number of GARDEN AND FOREST (vol. i., p. 410). It seems very possible that varying results would be produced, according to the kind of stocks used. Stocks of some of the foreign species might produce quite a different effect in regard to autumn coloring than would be the case if the desired form was grafted upon stocks of the same species.

This is a field for some valuable experiments. If American trees do not produce all their native splendor of autumn coloring when transplanted to Europe, it is also true that, as a rule, few European trees develop much brilliancy when planted here. But it is a well known fact that Japan can furnish many trees and shrubs which, when planted in this country, are quite as conspicuous in the autumn as some of our native species.

There is no class of woody plants in this latitude which contributes such rich autumnal effects in shrubberies or by roadsides as those of the genus Rhus, better known as Sumachs. The most striking one of them all (*R. venenata*) is also the most poisonous to nearly everybody, and but very few handle it without some visible evil effects.

The so-called Poison Ivy (*R. Toxicodendron*) also assumes pleasing colors, and is valuable as a covering for stone walls, etc. Its poisonous properties will always prevent it, as well as the preceding species, from becoming a welcome plant in much frequented gardens.

But there are three native non-poisonous species, the Staghorn Sumach (*R. typhina*), the Smooth Sumach (*R. glabra*) and *R. copallina*, which meet all desires for the bright colors, red, crimson, orange and yellow. The shining, polished looking foliage of the last named species usually becomes of a uniform rich purple.

The Smooth Sumach is also frequently purplish at first, but among the novelties at the Arnold Arboretum there is a form of this species with foliage of an unvarying yellow color in autumn.

Japan also furnishes bright autumn foliaged species, the best non-poisonous species yet introduced being *Rhus semialata*, var. *Osbeckii*, which in favorable seasons assumes beautiful orange and crimson tints. Another Japanese plant, *Cercidiphyllum Japonicum*, belonging to the Magnolia family, gives promise of rivaling all other trees in the beautiful tinting of its leaves in favorable seasons or when planted on dry ground. It is as yet, however, too rare and too little known to be fairly judged.

As the Sumachs lead the larger shrubs in regard to autumn colors, so the Maples may be said to be at the head of the list of trees. The Scarlet or Swamp Maple (*Acer rubrum*) assumes rich hues earlier in the season than any other tree; and this is followed, often before any frost, by the orange or gold, crimson or scarlet colors of the Rock or Sugar Maple. The small Mountain Maple (*A. spicatum*) often assumes various rich shades of red. The varieties of some Japanese species, notably those of *A. polymorphum*, which hardly become more than shrubs here, are well known for their beautiful summer foliage, which becomes intensified as autumn advances.

There are few plants of the Pea family which become beautiful on account of these rich colors as the life of the leaves is withdrawn, but, among the exceptions, the Yellow-Wood (*Cladrastis lutea*) is very striking on account of the clear, bright yellow color which it sometimes assumes in October. The leaves of our Ash trees fall early, but before they drop to the ground those of the White Ash (*Fraxinus Americana*) turn a rich brown or olive purple, or occasionally yellow. In its best condition *Sassafras officinale* changes to a delicate buff or orange color.

The bright scarlets and crimsons of the Tupelo (*Nyssa sylvatica*) in autumn always call forth admiration, and, considering the graceful habit of the tree and its bright green leaves in summer, it ought to be more frequently planted for ornament.

The Scarlet Oak (*Q. coccinea*) is well known for the rich scarlet which its leaves assume in late autumn; and the browns, reds, yellows and dark purples of individuals of other species of Oak only make the Scarlet the more conspicuous.

Although the Liquidambar is not considered very hardy in the latitude of Boston, it is much valued further south and west, and is cultivated in Europe for the deep crimson effects of its autumn foliage.

Many of the shrubs which assume rich autumn effects become purplish, often a deep, dull purple, before the red and orange colors show conspicuously. This is especially noticeable in wet seasons and among plants of the Cornel and Heath families. *Cornus florida* is an instance in which the early effect is purplish, changing later to scarlet or crimson above and russet beneath the leaves. Some of the other species of Cornus undergo the same changes. Many of the Vacciniums, Andromedas and Azaleas first become purplish, then crimson and orange; and the foliage of a small, southern tree (*Oxydendrum arboreum*) is at first intensely dark and at a distance much resembles that of the Flowering Dogwood. The Yellow-root (*Zanthorhiza apiifolia*) is prized for its bright orange colors of late autumn.

That brilliant autumn foliage is not common to all the species of any genus or habitat is well shown among the Spiræas, in which the Asiatic species, *S. Thunbergii* and *S. prunifolia*, become orange and scarlet, and almost no other species, not even our native ones, are of any autumnal value. *S. Thunbergii* is especially attractive and beautiful at this season.

The common Barberry (*B. vulgaris*) does not often develop very rich colors of foliage, in this country at least, while nearly all the introduced Asiatic varieties and species are conspicuous by their bright orange and scarlet, a Japanese species (*B. Sieboldi*) leading them all in this respect.

But no other Japanese plant can compare in autumnal value with *Ampelopsis tricuspidata* (also called *Ampelopsis Veitchii*, *Vitis inconstans*, Japanese Ivy, Boston Ivy, etc.), and altogether it should be considered one of the most valuable introductions from that country of beautiful plants. In its purples, reds and crimsons and pale yellows, where the direct rays of the sun do not strike, it rivals the beauty of the Virginian Creeper (*Ampelopsis quinquefolia*), which, about Boston, loses its bright crimson leaves before its Japanese relative has attained its greatest glory.

To give details of the changes of all the species of hardy woody plants which possess any value for their autumnal foliage would occupy many pages of Garden and Forest. Nearly all the genera have some species which have a claim to notice, and often nearly every species belonging to a genus has its own time of changing and peculiarities of tints. Many of the conifers, too, undergo distinct changes in color when the frosts appear, and the leaves of some of the Larches and of *Pseudolarix Kæmpferi* sometimes assume a pretty yellow or orange hue before they fall.

Arnold Arboretum. *J. G. Jack.*

The India Rubber Tree.

THE "India Rubber" or "Rubber plant" is a familiar and cherished object in many houses. There is not, probably, a plant among those which, during the last twenty-five years, have become really popular for the embellishment of living rooms and conservatories, which is better suited for the purpose; and there are few persons now who know anything about plants at all who are not familiar with the straight stem and splendid great, dark green, lustrous, leathery leaves of the "Rubber plant," which seems able to resist, with impunity, darkness, neglect and drought, and even an atmosphere vitiated by the gases from burning coals. Plants more than ten or twelve feet high are not very often found in our northern cities, and few people, perhaps, who see one of the plants flourishing year after year in the narrow quarters of an ordinary sized flower-pot realize that it belongs to a race of veritable giants, or that the *Ficus elastica*, as our common "Rubber" plant is called by botanists, is, in its native countries, a marvel among trees. Some idea, perhaps, of the manner of growth and of the size which this plant attains in the tropics can be obtained from the illustration upon page 547. It represents a tree of ordinary size and only fifty years old in the Botanical Garden of Peradenya, in Ceylon, one of an avenue of some length. It is difficult to realize that the aërial roots, grown into supplementary trunks, common to many species of Fig (for the Rubber plant is a Fig, and produces miniature figs precisely similar in structure to the figs of commerce), and the great roots twisting like huge serpents in all directions over the surface of the ground, belong to the little pot-plant we are familiar with.

Ficus elastica is a native of the foot-hills of the Sikkim Himalaya of Assam, of Burmah, Perak and of the islands of the Malayan Archipelago. It is a large tree, towering high above the forest, with a broad, leafy crown and immense trunk. Griffith describes, in the *Journal of the Asiatic Society* (vii. i., 132), a tree one hundred feet high, covering with its branches an area of 610 feet, the main trunk seventy-four feet in girth, while the trunk with its supplementary stems was 120 feet in circumference. This species of Fig, like many others found in the tropics, is an epiphyte—that is, the seed from which it springs germinates upon the trunk or branch of another tree. The young plant sends down roots to the ground, and as these grow they gradually smother the host-plant, and form an upright stem which in time becomes the support of the Fig-tree. The fruit of this species, which is probably never seen outside of the tropics, is ovoid, about the size of an olive, and greenish yellow in color.

Ficus elastica is a favorite ornamental tree throughout the tropics, and is largely used in the East Indies for shading avenues, for which purpose its wide-spreading head admirably fits it. It is cultivated in Assam, where large plantations of this tree have been made in recent years, for the caoutchouc, which it yields in large quantities, although it is now generally believed that Para rubber, the product of several species of Hevea, especially of *H. Braziliensis*, a large evergreen tree found on the banks of the Orinoco, retains its firmness longer and possesses greater strength and elasticity.

Ficus elastica was cultivated in England as early as 1815, and whoever first thought of using it for house decoration made a happy hit. It was probably first used in this way, to any great extent at least, in Berlin.

New or Little Known Plants.

Staphylea Bolanderi.

THE number of genera of woody plants with representatives in each of the great botanical regions of the North Temperate Zone, the coniferous and the ament bearing genera excepted, is not large. The discovery a few years ago in northern California of the Staphylea, which is figured upon page 545 of this issue, added this genus to the number. The flora of eastern North America contains, *S. trifolia*; *S. pinnata* inhabits central Europe; *S. Colchica*, which is by far the handsomest of the genus, is found in the Orient; *S. Emodi* in the Himalayas, and *S. Bumalda* in Japan.

*Staphylea Bolanderi** was discovered by the excellent collector whose name it bears on McCloud's Fork of the Sacramento River, in the neighborhood of Mt. Shasta, in April, 1874; and afterwards it was found again in the same region by Mr. J. G. Lemmon in fruit. It is a shrub with stout branches, covered with reddish brown bark, that of the year pale green or straw colored. The leaves are three-foliolate, with broadly oval or orbiculate, glabrous, serrulate, abruptly acuminate leaflets. The flowers are greenish white, with exserted stamens and style, the sepals rather shorter than the petals. The fruit, which is rather narrow for the length, is two and a half inches long, with slightly flattened seeds one-fourth of an inch long.

Staphylea Bolanderi is apparently one of the rarest shrubs of the Pacific forests, and has not been introduced into cultivation. *C. S. S.*

Plant Notes.

The Cloudberry. (*Rubus Chamæmorus.*)

THE Cloudberry, which is found in few localities south of the Canadian boundary, and even then not in great abundance, is quite common and greatly prized in Newfoundland, Labrador, Nova Scotia and northern Quebec. It is known under various names, and is very abundant through northern Canada, extending from the Atlantic to the Pacific, and north to the Arctic Sea. Growing always in peat bogs at the south, and further north in open boggy places in woods, it is found in the greatest profusion on the barrens beyond the northern limit of tree growth, occasionally ripening its fruit even within the Arctic Circle. In spite of the fact that it is very susceptible to frost, and that frequently the fruit does not mature at all, it seems to improve in quality, like a few other berries, toward the northern limits of its distribution.

Rubus arcticus and *R. Chamæmorus* are frequently found together; the broad, rose colored flowers of the one contrasting beautifully with the large, white Anemone blossoms of the other. The Cloudberry resembles none of its congeners in color or in flavor. The rich amber or golden berries are only slightly tinged with deep red on the side toward the sun;

* *Staphylea Bolanderi*, Gray in *Proc. Am. Acad.*, x. 69.—Brewer & Watson, *Bot. California*, i. 108.

and they never have more than the slightest trace of acidity. Indeed, so tasteless is the berry that it can hardly be eaten at all until almost ripe. The berries when apparently mature are often dry and insipid, tasting not unlike a very young apple; indeed, the name "Bake Apple Berry," by which it is known in the maritime provinces, may have been given to it on account of the real or supposed resemblance of its flavor to that of a baked apple.

When quite ripe, however, the Cloudberry has an intensely sweet, honey-like flavor, slightly recalling that of the large White Raspberry of cultivation; and then if eaten in small quantities it is perhaps the most delicious of our northern berries. The *habitants* of Quebec and the Indians prefer it just as it approaches ripeness and before it has lost its acid taste; but to southerners it is at that time hardly palatable.

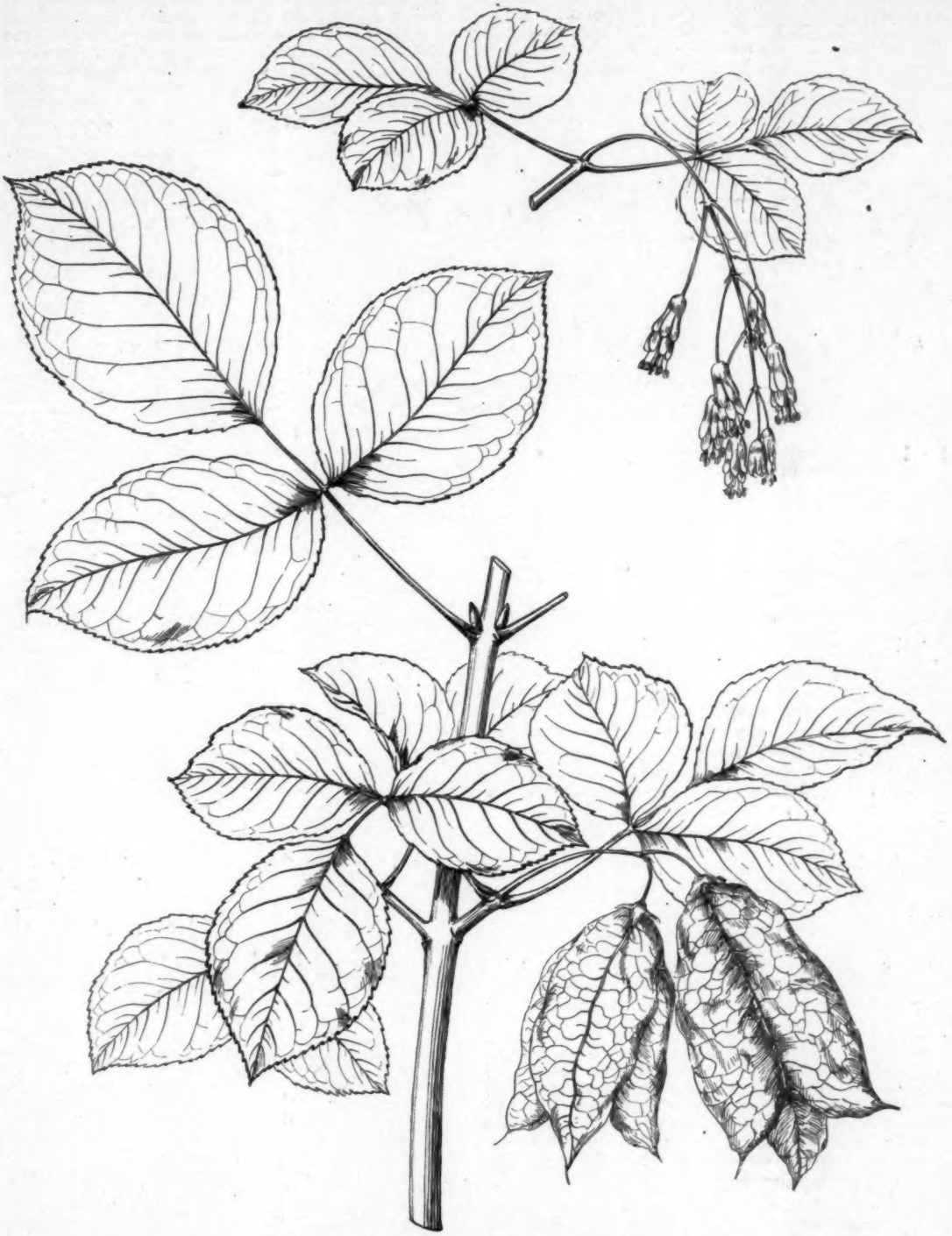

Fig. 142.—Staphylea Bolanderi.—See page 544.

It is known in northern Quebec and about Hudson's Bay as the Yellow Berry, and in that part of the country there is no fruit more sought after for cooking. A small amount of sugar is needed in preparing it for the table, and jam made from this berry has such a rich and delicate flavor, so unlike

that made from any other fruit, that at several of the Hudson Bay Company's posts large quantities are preserved and sent to friends at home. The Chipvegan Indians of the Mackenzie River Valley make a sugar from the juice of the birch in which the Cloudberries are cooked, and, prepared in this manner, they are considered a great delicacy. Few birds eat the Cloudberry, so that when they are not picked by man they decay slowly on the vines and finally drop to the ground.

Ottawa. *J. M. Macoun.*

Foreign Correspondence.

London Letter.

SOME of your readers may be glad to know what plants are the most attractive in our warm houses at this time of year. The following are exceptionally good at Kew just now. They are not new, indeed some are of the oldest of garden plants, still they do not appear to find much favor nowadays:

ÆSCHYNANTHUS SPECIOSUS.—This plant has been gorgeous with flowers since June and there are still several specimens in full bloom. There are few plants more charming than this, whether it be in flower in summer or in November. It has numerous erect stems, eighteen inches high, bearing opposite, ovate-lanceolate, dark green leaves, three inches long. The flowers are in terminal fascicles, strong stems bearing as many as twenty flowers, which all open together. They are erect, and each one is composed of a five-lobed subulate calyx and a tubular corolla three to four inches long, curved at the top where the mouth is divided into four rounded lobes. The color is bright orange, with scarlet lobes and a line of black dividing the orange from the scarlet. The flowers remain fresh more than a fortnight. The plants should be grown in pots in a compost of turfy peat, leaf-mould and plenty of sand. They like abundance of moisture and a stove temperature all the year round. This species was introduced in 1847 by Messrs. Veitch through their collector, Lobb, who found it growing freely, attached to the trunks of large trees in Java.

COSTUS IGNEUS.—This species was introduced from Bahia by Messrs. Linden in 1882. As a flowering plant it is much the best of the several species of Costus that are in cultivation, being of dwarf, compact habit, easy to cultivate, a free bloomer, with large and bright colored flowers. Here it has been in flower all summer—not a succession of plants, but the same plants from June until now. Its stems are herbaceous, about a foot high, with elliptical-lanceolate dark green leaves, the points slender and acuminate; their length is about six inches. The flowers are in terminal clusters or heads, and each head is composed of a great number of scales and buds. One or two flowers are expanded at a time and remain fresh about a day. Each flower is composed of a large, circular, wavy lip which measures two inches across, the other lobes small, whilst in the middle there is a tongue-like appendage to the sessile anther. The color is bright, glistening orange red. The color and form of the flowers are exceptional among stove-plants. Besides this we have *C. Malorteanus*, which has short stems, large, orbicular, fleshy, hairy, gray-green leaves and heads of crimson flowers. For tropical aquaria this species is of value, as it likes water and becomes attractive with liberal treatment. *C. speciosus* has stems four feet long and crimson flowers. *C. spiralis* is similar, but smaller in leaf and habit. The genus is a large one and it occurs in all the tropics. In some species, as, for instance, *C. spiralis*, the flowers are sometimes terminal on the leafy stems and sometimes on short stems which spring direct from the rhizome, as in the Gingers.

BEGONIA HAAGEANA.—The merits of this new Begonia were mentioned incidentally by me in a letter last year. A year's further trial has proved the plant to be of first-rate merit as a garden Begonia. Among the many species of evergreen Begonias grown at Kew, this one stands out prominently on account of its bold habit, handsome foliage, floriferousness, and the size and beauty of its flowers. These are colored a soft rosy white, with conspicuous crimson hairs on the outside of the sepals; the male flowers are one and one-half inches across, and they are in very large branching racemes, strong stems producing racemes nine inches across. The female flowers are smaller and in looser racemes. The plants at Kew are now in full flower. In the hands of a clever hybridizer, such as Monsieur Lemoine, this species might be made much of. It was introduced from Brazil by Messrs. Haage & Schmidt, of Erfurt, and it flowered for the first time, at Kew, in 1887. A figure of it is given in the *Botanical Magazine*, *t.* 7028, under the name of *B. Scharffii*. This is, however, a different species, which was introduced at the same time as *B. Haageana* and belongs to the same section.

DISSOTIS INCANA.—This is one of a genus of Melastomads found in Africa, mostly in the tropics. Until this species was introduced, none of those tried had proved of any value for the garden, but this one is handsome enough to find favor with many. It has numerous, erect, four-angled stems which spring freely from the root-stock and grow to a length of about two and one-half feet. The leaves are three inches long, opposite, ovate-lenceolate, with prominent nerves on the surface covered with scabrid hairs. The flowers are borne in large, terminal, spike-like racemes, the length of which is sometimes eight inches, and thickly crowded with deep purplish crimson flowers. These are one and one-half inches across, and composed of five ovate, overlapping petals, and urn-shaped, green calyx with five small sepals, purple anthers and yellow filaments. They are not unlike the flowers of a Monochœtum; but the plant is more vigorous and the flowers more abundant than in any of that genus. The Kew plants were introduced from Natal in 1886, under the name of *Osbeckia Umlasiana*. They have been grown in pots plunged in a border out-of-doors all summer and removed into a green-house to flower.

IXORA MACROTHYRSA.—I have already described this to your readers, and only refer to it now because in addition to its display in August it is now again beautiful with flowers. This time the plants are younger, having a single stem, erect, two feet high and crowned with a magnificent head of rich scarlet flowers. Nothing would be finer in the stove than this.

The meeting of the Royal Horticultural Society, on Tuesday, October 22d, was well attended, in spite of one of our famous London fogs. The exhibits were more than usually interesting, some of the groups being extremely fine. There were a few good Orchids, amongst which was a very fine specimen of Tantz's variety of *Odontoglossum grande*, the flowers remarkably large and well marked. *O. Insleayi splendens aurea*, not nearly as good as the type, has a bright yellow lip, with brown markings, the sepals pale coffee colored. The golden variety of *O. grande* was also very fine. *Dendrobium formosum*, var. *giganteum*, from Mr. Gladstone, received a cultural commendation; the specimen, a very fine one, was well flowered. *Cattleya aurea*, var. *Blenheimensis*, from the Duke of Marlborough, appears to differ very little from the old Dowiana, and *D. Statterianum*, from St. Albans, with fine rosy purple sepals and deep purple lip, does not seem to differ much from *D. superbiens*.

Epidendrum sceptrum, a novelty from Sir T. Lawrence, received a botanical certificate. The racemes are large, crowded with bright yellow, purple marked flowers—a very interesting species. *Cœlogyne speciosa*, from the same garden, was very fine. The Messrs. Veitch, of Chelsea, as usual, had a very handsome group of mixed plants, amongst which were many rare and a few new plants. Amongst the rarer plants were *Dracæna Doucettii*, a nice habited and remarkably distinct form, the leaves variegated white and green, promising to be a useful adjunct to table decoration and for like purposes. The Crotons were very nicely colored, as were the Palms, *Sarracenia Chelsoni* and the new *S. Wrigleyana*, the latter very fine and distinct. *Gynerium argenteum variegatum* looks like a hardy plant, and if so will certainly be one of the plants of the future. The leaves are very handsome, the variegation yellow and bright green, being very striking. A new Carex, called *C., species variegata*, received a first class certificate. The leaves are very narrow, grass-like, green on the edges, with an ivory white centre. The habit resembles that of an Isolepis, with broader foliage, and altogether a more attractive appearance. A remarkable and very interesting new hybrid Rhododendron was shown in flower, and received a first-class certificate. It is called *R. Indico-Javanicum*, and is a cross between *R. Javanicum* Lord Wolseley and *Azalea indica*, Stella. The flowers are darker than those of the Rhododendron, the substance much better, and the shape altered to a narrow, and, for their size, longer tube, the limb spreading very little. The leaves of the specimen in flower were nearly or quite those of the Rhododendron, while another specimen, not in flower, from the same seed-pod, had leaves decidedly those of an Azalea. This is the first cross of its kind, and, besides being full of interest botanically, will prove very useful to horticulture. The Messrs. Veitch also sent a very handsome collection of autumn foliage. To you in America this will appear trifling perhaps, but as the product of a climate like that of England, wonderful, to say the least, were Japanese Maples of all shades, from blood red to golden yellow, exquisite in shape and cutting; *Populus fastigiata*, clear lemon yellow; Rhus of various species; Liquidambar, and the handsome red leaved Guelder Rose. The collection was very large, the leaves being simply laid on the table in bunches, and were very effective. There were also close by a very fine group of cut blooms of hybrid Rhododendrons and a charming

mixed bunch of Pernettyas. A group of dried grasses from South Africa attracted a good deal of attention, the chocolate brown Cyperus or Carex being highly ornamental. The Chrysanthemums, though few, were choice, Stanstead Surprise, a seedling from a Japanese variety, from J. Laing & Son, being of fine form, and a warm rosy crimson color. It received a first class certificate. Stanstead White, an incurved Japanese, pure white, of large, fine form, is very distinct and desirable. M. Benard, a reflexed Japanese, with purple amaranth, very large flowers, attracted much attention. From Kent, the home of flowers, M. Pankoncke, madder brown, received an award of merit. William Neville also received an award of merit. It is reflexed, orange buff and of very fine form. Eynsford White was perhaps the finest in the show. It is far superior to Avalanche, the florets broad, strap-shaped, reflexed and pure white. It looks like a huge snowball. M. Charles Lebrosq, a single variety, with citron or Indian yellow flowers, small, but abundant, also received an award of merit. Octavie is an extremely pretty Begonia, and very useful for autumn cutting, the flowers double, white, and remarkably like those of the Camellia. *Gymnogramme schizophylla*, var. *gloriosa*, from Mr. May, received a bronze Banksian medal. It is a most lovely form. The Adiantums in this group, as usual, were finely colored. *W. Watson.*

London.

Fig. 143.—Ficus elastica in the Botanic Garden at Peradenya, Ceylon.—See page 544.

Cultural Department.

Autumn Crocuses.

THE autumn Crocuses, of which there are now twenty distinct species, exclusive of well marked or garden varieties, have flowered remarkably well in English gardens this season, notwithstanding the unusually large rainfalls of last year. These autumn Crocuses are very ornamental, filling up a large gap at a time when flowers of this nature are rather scarce, and especially in the rock-garden, where the groups of alpines have long since begun to show the sere and yellow leaf. The majority of them are very easily cultivated, and a few of them, notably *C. speciosus*, *C. medius* and *C. nudiflorus*, multiply with surprising rapidity. Their only fault, if such it may be termed, is that most of them flower before the leaves have attained any material size; but even this is easily remedied by planting them, as is now almost universally practiced, among Pinks, and other loose, tufty plants. In this matter, however, they are free from one great objection we have always felt to the autumn Colchicums, which are also erroneously called autumn Crocuses—that is, the large and very ugly leaves produced by the Colchicums in spring, if planted in borders or beds which at this time are expected to look their very neatest. It would be a pity to discard them on this account, however, and we have compromised the matter by planting them in the grass in the pleasure garden or park, where they do very well and make a pretty feature. The spring Crocuses are abundant enough, including all the different forms and bright colors of *C. aureus*, *C. chrysanthus*, *C. biflorus*, and the handsome various-colored *C. Imperati;* but the autumn ones, amongst, which we have also a pure yellow, several purples of different shades and many whites, come, as already stated, at a time when such flowers are scarce, and, therefore, they are doubly welcome. It is rare to see these Crocuses destroyed by frosts; the earlier ones, beginning with the middle of August, are over before the frosts are severe enough. Heavy rains do most damage, and this is more apparent in the absence of a ground-work which serves as a support to the long and usually weak flower-tubes. *C. Sharojani* is the first to make an appearance, about the middle of August, and in very hot

seasons as early as the end of July. It is the only species in which the previous year's leaves live until the autumn flowering-time. The flowers are of good size, deep orange and very attractive. It is a native of the north-west Caucasus; its scarcity being somewhat remarkable, seeing that it grows intermixed with the more common *C. vallicola*. It increases very slowly. *C. vallicola* follows closely, and is usually in flower about the beginning of September. Balansa says that in its native home, the Alps of Trebizond and Lazistan, it flowers as early as July. The flowers are usually of a pale cream color, and it is the only species in which the segments have fine, thread-like appendages at their summit.

C. nudiflorus follows next, being rarely later than the beginning of September. It is a very hardy species, naturalized in several counties in England, notably Nottingham, where we believe it is plentiful still. It is the old *C. Pyrenæus* of Parkinson, with large, unstriped, bluish purple flowers, the tubes unusually long, and, unless supported, very liable to be destroyed with heavy rains. The corms throw out long stolons, and where not confined sometimes become troublesome. The pure white variety is very desirable, common about Biarritz, Astureas and in the Pyrenees.

C. zonatus, which we also find in gardens as *C. Kotschyanus*, is one of the newer species, discovered in 1855 in the mountainous districts of Cilicia, to the north of Taurus. It is one of the early ones, but not so regular as some of the others. It is one of the freest flowering and most useful of the autumn species, increasing with rapidity and very hardy. The flowers are lilac or rosy lilac, veined on the inside with five to seven purple lines, and with a bright orange base and yellow fringed stigmata.

C. iridiflorus (*Byzantinus* of Parkinson) is a very remarkable species, intermediate almost between a Crocus and an Iris, and on this account Schur proposed the generic name of *Crociris iridiflorus*. It is the tallest, and, with the exception of *C. medius*, the largest of the genus. The outer segments, of a clear, rich purple, are almost twice the size of the pale lilac inner ones, forming a very odd and remarkable flower. A native of Transylvania, flowering late in September.

C. speciosus is perhaps the commonest and most serviceable of all the autumn species. Its geographical distribution ranges from northern Persia to the Caucasus and Transylvania, and there is a record of its occurrence in central Asia Minor, where it was gathered by Kotschy in November, 1859. It produces, in great abundance, large, rich, bright lilac flowers, the inner surface feathered with numerous, dark purple, much branched lines from base to summit of segments. It multiplies rapidly by cormlets formed at the base of the old corms, as many as a dozen to each.

C. pulchellus follows the last very closely, and may be readily mistaken for *C. zonatus*, the color of their flowers being very similar. It usually begins to flower about the middle of September, and in mild autumns continues to flower until near Christmas; outer segments self-colored, on outside pale lilac, the inner surface faintly marked with purple lines, the anthers white, stigmata orange. There is also a rare white variety. Native of the Bosphorus, where it is found in heathy thickets.

C. Asturicus and *C. Clusii* are very nearly allied, both having purple flowers and leaves appearing at flowering-time.

C. ochroleucus, a charming little white flowered species, flowering from about the middle of October to December; creamy white with bright yellow throat; from northern Palestine and Syria.

C. medius is one of the most delightful of the autumn Crocusus, producing abundantly large, bright purple flowers, with huge spreading masses of bright scarlet stigmata, very hardy and increasing rapidly. It is found on the Riviera, at Mentone, etc.

C. longiflorus is a very neat species; the flowers are lilac veined purple, the stigmata nearly entire and of a bright scarlet. It increases very rapidly. A native of southern Europe.

C. Salzmanni has varied purple flowers, and *C. lævigatus* creamy color striped purple flowers. *C. Cambessedesii*, the flowering season of which varies under cultivation from October to April, has pale buff flowers with purple featherings on the outside. *C. serotinus*, *C. Hadriaticus*, *C. cancellatus* and lastly *C. sativus* and its numerous very fine varieties, Cartwrightianus, white, with scarlet stigmata, are all effective. These are all in cultivation in English gardens, and are much appreciated. Could a home be found for them in America, where the summer is hotter and the chances of ripening more certain than it is with us, they would be worthy though humble companions to your Michaelmas Daisies and other late autumn-flowering plants.

Kew. *D. Dewar.*

Notes on Forcing.

THIS is an important part of the winter work of gardeners, and preparation for it now demands attention so that the stock may be ready for an early start and a proper rotation. And although, in the forcing of Dutch bulbs, Lilies-of-the-Valley, etc., to which attention is now invited, the details are familiar to most plant-growers, yet it may be of benefit to some novices to have a few hints in regard to this interesting, though not specially intricate process. The first essential is to buy good stock—sound, solid bulbs, or large, plump pips, as the case may be—and to store them away in pots, pans or boxes as soon as received, so that a good foundation of roots may be grown by the time the bulbs are required to be brought into heat.

In regard to Lily-of-the-Valley there has been some slight difference of opinion as to where the best roots are produced for forcing, but in my experience those grown in the vicinity of Berlin have proved far superior to any Holland-grown pips, both in size and quality of bloom, and they can also be forced earlier than the latter. For late forcing the difference is not material, though even in that case the German pips usually produce the finest flowers. When grown in pots, the undivided roots or clumps may be used, and, as they generally throw up more leaves in proportion than the selected or separated pips, they are more effective, though the latter offer one advantage in allowing a more regular arrangement of the spikes of bloom, and particularly when the plan used by some of the London market-growers is adopted. This plan is to force the pips in a bench of sand or light soil, over a strong bottom heat to start them, keeping them there until the flowers are almost ready to open, when they are taken up and potted. After keeping them for a day or two, to enable them to overcome the shock, they are sent into market.

The ordinary method of forcing Lily-of-the-Valley for flowers is to pot the pips or box them as soon as received, taking care to keep the points of the shoots well above the surface of the soil. After this a good watering should be given to them, when they should be placed in a cold frame, where it will be found best to cover them at first with a thin layer of long litter, or straw from the manure-heap, and over this to spread from one to two inches of soil; the litter is put on first, so that the pots may be more readily cleaned off afterward when the soil becomes frozen, the straw preventing the soil from sticking to the pips.

On bringing them into the house in which they are to be forced, the boxes should be placed on a bench, to which a steady bottom-heat of from eighty-five to ninety degrees can be applied; and by covering the pips with a layer of sphagnum and enclosing the bench in a sort of box or cover made of sashes, shutters or oiled muslin, as may be most convenient, so as to exclude a portion of the light and at the same time to confine the heat, a more regular temperature can be preserved. By this system the flower-spikes may be sufficiently drawn to stand well above the foliage, though more light should be admitted before the flowers begin to open, else they become thin and flimsy in texture and consequently do not last long. In fact, at this stage they may be taken out of the forcing house and put in a cooler one to harden off and open their flowers. The time occupied in forcing Lily-of-the-Valley on this plan is from twenty-one to twenty-four days, according to the time of the year in which the operation takes place, and it is therefore easy to gauge the time of bringing in fresh installments of the pips to insure a steady succession of flowers.

Tulips, Hyacinths, Narcissi, etc., for forcing, should be potted as early as possible, and for this purpose good, light, rather sandy loam is preferable, if it contains a fair mixture of manure. In potting the points of the bulbs should be kept well above the surface of the soil. They should then be placed in a frame and buried to a depth of three to four inches in coal ashes, sand or light soil, the ashes being preferable because they are somewhat repellent to earthworms.

After the bulbs are well rooted they may be brought into heat as required, and in the case of the Tulips it is well to shade them enough at first to draw the flower-stems up to a fair length, as otherwise some of the varieties are liable to grow too short in the stem to be effective either for cutting or for decorating.

Hyacinths and many of the Narcissi force easily and do not require much heat; in fact, they are frequently forced underneath the benches in green-houses, from whence they are brought into prominence as the flowers appear.

Holmesburg, Pa. *W. H. Taplin.*

Spiræa Kamtschatika, recently described in the *Gardeners' Chronicle* as a new plant, has long been known in American gardens under the provisional name of *Spiræa species*, Japan, of which country it is a native. It has also been called *S. gigantea*, a name which is very appropriate, inasmuch as it is the largest herbaceous species with which we are acquainted. It attains a height of from eight to ten feet, the tall, erect stems being clothed with large palmate foliage, somewhat resembling that of a grape vine. The stem is terminated by a large branching panicle of creamy white flowers. It is stated in the *Gardeners' Chronicle* on the authority of Pallas, that the natives of Kamtschatka eat the young shoots in spring uncooked, also the roots during scarcity of food in winter, while the leaves are used in soup. Be this as it may, the plant is a desirable one to associate with other tall growing subjects, as a background to the flower border, where its distinct appearance arrests attention at once. There is one thing to be borne in mind when planting it, and that is that strong sunshine is liable to scorch the young growth, so that a position in which it can have shade and plenty of moisture at the roots is essential to the success of this gigantic Spiræa.

Sternbergia lutea.—This plant, often called *Amaryllis lutea*, has afforded for the past month one of the prettiest bits of color in the garden. The bright yellow flowers resemble the Crocus somewhat in general appearance, but they are much larger and of longer duration. The most important feature of the plant is its autumnal flowering. When the ground is covered with fallen leaves it is a particularly pleasing sight to see the bright green foliage and yellow flowers peeping up and braving the frosts that have laid low every other flower. The Sternbergia is perfectly hardy here with us when provision is made for throwing off the snow and water in winter. This we do with perfect success by placing a sash over the bed. The foliage dies down early in summer to rest the bulb until early autumn, when growth recommences. Indeed, having had occasion this summer to shift our stock of bulbs, we allowed them to remain for some time in an open box without soil or moisture, and yet flowers were produced and fully expanded before they were planted in the soil. The bulbs are usually the size of those of a Narcissus and they should be planted about four inches deep. A cold wet soil in winter should be avoided.

Catasetum Bungerothii.—I recently had the pleasure of seeing, in the establishment of Messrs. Siebrecht & Wadley, at New Rochelle, a fine specimen, in bloom, of this finest of recent introductions among Orchids. The plant under note was a particularly fine form, with large cup-shaped flowers of the purest white, broken only by a spot of bright orange in the centre of each. Much has been written and said of this beautiful Orchid, but judging from the specimen we saw it seems impossible to over-praise so fine a novelty. We noticed, also, a batch of *Cypripedium Spicerianum*, which, for size and rude health, left nothing to be desired. This variety and *C. insigne* are in great demand for cut-flower work. *Cattleya Warneri* was represented by several forms strikingly rich in color, and *Oncidium Varicosum* by a number of large branched sprays, which, when grouped with other Orchids and Maidenhair fern, had a charming effect. A number of Chrysanthemums from Japan were just unfolding their first flowers, and among them were some new varieties which will no doubt be heard of later on. *O.*

Passaic, N. J.

Storing Root Crops.—Many roots, like turnips and carrots, can be safely wintered in earth pits, and even apples, if properly treated, can be kept, with little loss, in the same way. The real danger is not from cold, for the frost can always be excluded by a sufficiently thick covering. The danger from heat is much more serious. On this account the roots should not be lifted until the weather is cool, and they should not be placed at once in the pit or root-cellar, but laid in small heaps of four or five bushels and covered lightly with straw. If they remain in this way for a week or so, covered with shutters to protect them when it rains, they can, after the so-called sweating process, be removed to the pit. Even then they should be lightly covered with straw at first and the earth should be applied gradually as the weather grows severe, so that they will remain uniformly cool and escape heating. It is well to place a drain-tile at the top of the cone for a ventilating chimney, and if the crop is large, so that it can be placed in a long windrow, the chimneys should be set about six feet apart. These long piles can be five or six feet wide and from three to four feet high. The trench, or bottom of the pit, need not be more than eight inches below the surface. Of course, no wet, soft or decayed roots should be placed in pit or cellar. Parsnips and salsify are better flavored if left in the ground; but it is troublesome to lift them in winter, and, therefore, part of the crop can be placed in a cellar and covered with sandy soil. The tap-roots should never be cut, nor should the tops, especially of beets or salsify, be cut close to the crown. If a root cellar is used, it should be dry, well ventilated, rather dark and kept at a uniform temperature not higher than forty degrees.

Long Island. *C. G.*

Prolonging the Tomato Season.—All who are fond of the peculiar flavor of the tomato should know how easily the season of this vegetable may be prolonged. By simply covering the plants with old carpets, or any other convenient fabrics, during nights that threaten frost, the plants may often be kept in a growing condition for days, and even weeks, after unprotected plants have perished. When the nights become very cold, a hot bed frame may be placed over two or three vigorous plants, and covered with sash. The sun shining through the glass at midday will give sufficient heat to mature the fruit quite rapidly. As the last resort, the green fruits may be picked and spread out on a shelf in a chamber, or cellar, where they will ripen slowly for two or three weeks after herbage out-of-doors has been killed by frost. If they do not ripen as rapidly as is desired, the maturity may be hastened by transferring them to a shelf in a warm part of the kitchen.

Experiment Station, Madison, Wis. *E. S. Goff.*

Correspondence.

The National Flower.

To the Editor of GARDEN AND FOREST:

Sir.—The interesting communication in GARDEN AND FOREST of the 10th of July, from the pen of Mrs. Van Rensselaer, on "The Choice of a National Flower," effectually disposes of all claims to that honor of the Trailing Arbutus, so sweet and shy; the aggressive Ox-eyed Daisy of the early summer; the too æsthetic Sunflower of the dog days, and the graceful Golden-rod of the fall-time. And the merits of the Kalmia, or Mountain Laurel, are so attractively set forth that one is almost convinced that it is in all respects the most suitable floral emblem to share with the great American eagle in decorating our flags and banners, shields and seals, and all other national and official ensigns.

Granting all that has been said in approval of the Kalmia, the fact remains that it is generally known, where known at all, by the common name of Laurel, which is also the botanical or scientific name of a large genus of plants not indigenous to our country, among them the *Laurus nobilis*, the Laurel of the ancients. This shrub is a native of the Mediterranean coast, and has been consecrated since time immemorial to priests and sacrifices, heroes and victors in wars and games of skill, and has been celebrated accordingly. To poet, painter and sculptor it still affords inspiration for realistic and conventional emblems and designs. Our Laurel is so called on account of a resemblance of its foliage in shape and evergreen color to this European Laurel, although very dissimilar in flower and quite destitute of odor or beauty in fruit, and very distinct in all its family relations.

Now if our Laurel is selected for the national flower, how are the two celebrated plants of the same name and similar in foliage ever to be distinguished? It would seem that confusion must arise. At this moment an instance is recalled in which a famous American poet mentions the two in the same poem as if they were identical. This is a most serious objection to our Laurel as a national flower. True, it is in some localities known by the undignified name of "Calico-bush," on account of its spotted flowers, and in others as the "Bush Ivy," on account of the similarity between the shining green of its foliage and that of the Hedera; again "Spoonwood," for what reason who can tell? But no one would wish to have any of these names substituted for Laurel, even if it could be successfully accomplished, much less the name of "Sheep-poison" or "Lamb-kill," as certain varieties are sometimes called on account of the poisonous qualities that lurk beneath the beauty of their foliage.

All that has been so charmingly said in its favor can, however, be as truly said of the *Magnolia grandiflora*, and added to this are a great majesty and dignity, unexcelled by any tree of the American forest. In the great Bald Eagle as a national emblem we have the king of birds. Why not in flowers choose the acknowledged queen? The blossom of the Magnolia is beautiful in color and form, and blessed, to a remarkable degree, with delicious fragrance. The tree is royal in size, almost too symmetrical in outline of foliage, has a handsome,

smooth bark, and dense, large, dark green, thick leaves. It is so distinctive in all its parts as never to lose its identity. Gray describes it as "a noble tree, remarkable for its delightfully fragrant flowers, its thick evergreen leaves, with a shiny, polished, deep green surface above and rusty below."

It is cultivated in all parts of the United States and of Europe where it is hardy, and indeed all over the world where there are parks and gardens, as one of the choicest and most desirable acquisitions. Its stateliness and individuality rival that of the Egyptian Lotus, and it is quite as graceful. It has, as a type or model for artistic variation, all the advantages possessed by the Laurel, in addition to its character and loftiness. No poison lurks beneath its charms, no ignominious common name vulgarizes and offends fastidious taste and feelings. It is seldom spoken of except by its name, Magnolia, and even its Indian name, Toola, is melodious. On the contrary, many sentimental associations are connected with it in its native home, and it has been more than once the inspiration of the artist's pencil and the poet's song. Its succession of flowers continues several months in favorable situations, and the flower lasts long after cutting.

Would not its sculptured form, either natural or conventionalized, adorn the triumphal arch or garden gate with equal appropriateness? Would not its pure creamy color against the shining green foliage, its stately grace of carriage, be a royal subject for the painter's canvas and equally embellish the frieze or dado of the columns in the new library, or the border of a one-cent postage stamp?

The inflorescence of the Kalmia is in showy umbels, gradually blooming from the centre outward, so that until late in its short season of blossoming a terminal edge of half developed flower-buds adds grace and charm to the cluster; but a solitary blossom is so rarely separated from its companions that it would hardly be recognized except by the close observer.

It is true, perhaps, that an individual flower of the Mountain Laurel, with its sea shell, pearly tints and delicate markings, its perfectly regular and symmetrical five-lobed corolla, with its unvarying flutings and deep dimples that so carefully imprison the ten anthers of the daintily arched filaments, and make it look, as a lady devotee to fancy work expresses it, "as if it had so much work on it," are more exquisitely beautiful and bewildering than the great creamy bowl-shaped blossom of the Magnolia, with its smooth, thick, velvety texture, simpler form and less intricate disposition of the numerous stamens and pistils; but it surely has less character, and is less imposing and architectural. Is not the larger flower, which always blooms in solitary grandeur, although less complicated in form, with its conical buds, trinity of sepals, large, broad, smooth petals, with imbricated under edges and narrow clawed bases arranged uniformly around the many quaint stamens and pistils on the long receptacle, each making a fairy cavern filled to overflowing with delicious odors, far better for the designer's use and much more easy to identify than the more intricate and wonderful Kalmia?

And if there is any lack of dignity and variety and adaptability for the designer's purposes in the bud and blossom, this is more than made up in the unique egg-shaped fruit, with its overlapping ruby red carpels, each of which, on bursting into perfect maturity, discloses two berry-like seeds attached by spiral threads, making it unusually attractive and offeriag endless possibilities to the artist.

No one ever saw a noble specimen of this stately tree—which often reaches a height of more than a hundred feet, with its broad spreading lower branches towering in a pyramidal form toward the sky, with tier on tier of its lovely, large, milky blossoms, each well poised against the background of dense dark green, glossy foliage—without pausing to exclaim upon its majesty and grandeur. The only objections that can be seriously brought against it are, perhaps, that the individual flower is too large and rare to be utilized as a badge or personal decoration, and that its distribution over the country is somewhat local. And yet it abounds in a larger section of the country than the Mountain Laurel, and its rarity is one of its charms. Its representation upon flags and banners, frescoes and tiles, shields and escutcheons, monuments and columns, tapestries and draperies of every material, would soon make it as familiar as the great Bald Eagle, of which a living specimen is now a very great novelty.

The bird of freedom was chosen, we are told, for our great seal and coat of arms as an emblem of self-reliance, liberty and strength; and what flower can be named that will so favorably compare with it in representing these same desirable qualities as the Magnolia? In making selections from our native flora and fauna, it would seem to strike the interested observer that a comparison would be somewhat like this—the Trailing Arbutus to the pretty bobolink, the graceful Goldenrod to the much loved robin redbreast, the common Ox-eyed Daisy to the blackbird or blue jay, the Sunflower to the æsthetic owl, and the Kalmia to the beautiful oriole. But what could be found in the floral world so symbolical of the power and strength, liberty and freedom of the great American Eagle, as the majestic and imposing *Magnolia grandiflora*?

Magnolia grandiflora was among the favorite trees, if not the especial one, of Washington. An imposing specimen over seventy-five feet high, known to have been planted by his own hands, still flourishes at Mount Vernon; and every year since this modern Mecca has been accessible to the public, each fallen petal of its faded blossoms, every glossy leaf of its rich foliage and every seed that drops from its fruit-pods have been carried away as precious souvenirs by the visitors to that hallowed spot.

Would it not be graceful and fitting in these times, when greater fraternity of feeling in all sections of the country is desired, for the north to take conspicuous part in adopting for the national floral emblem this queen of our southern forests?

Washington, D. C. *Mary Fuller.*

[*Magnolia grandiflora* is not only the most beautiful tree of our Atlantic forests, but it is one of the most beautiful known anywhere. Its comparatively restricted range—for it grows naturally only in a narrow belt of country on the south Atlantic and Gulf coasts—might be used as an argument against the adoption of this Magnolia as the national flower. Magnolia, moreover, is not American exclusively, and there are rather more species in eastern Asia than in America, where, with a single exception (*Magnolia glauca*), they are confined to the southern states and to Mexico. The range of Kalmia—an exclusively North American genus—is wider than that of all our Magnolias, being found from Canada to Texas; and it is certainly much better known to the great mass of the American people than any Magnolia. The objection which can be made to it as a national flower is that it is not found in the Rocky Mountains or in any part of the country west of them.—Ed.]

Correspondence.

Chrysanthemums at Orange, New Jersey.

To the Editor of Garden and Forest:

Sir.—Mr. T. H. Spaulding's Chrysanthemum-houses at Llewellyn Park, New Jersey, at present contain a very large and interesting collection of flowers, and are well worth inspection. Visiting this establishment a few days since, I found the early varieties already cut over and marketed, and the mid-season kinds in full bloom. Of the new American introductions for 1889, it was a pleasure to note an unusual number of valuable additions. Mrs. Hardy was in excellent form, though small, from late obtained stock. Mrs. Carnegie was the same bold, dark colored flower shown last year, but this variety evidently does not enjoy close air or confinement. Mrs. W. K. Harris was a disappointment, as seen here, and not equal to H. Cannell, which it resembles. Excellent (Waterer), a most charming soft pink; Sunnyside (Craig), reflexed flushed pink, a grand flower; T. C. Price (Waterer), cream pink; Mrs. Jessie Henszey (Harris), canary; Mrs. A. C. Burpee (Craig), reflexed yellow, and Mrs. S. Houston (Waterer), white, were the pick of the Philadelphia varieties of 1889.

Of Fewkes' set, Neesima, Lincoln and Kioto, yellow, Empress of Japan (Belle Hickey), fine white incurved, and L. B. Bird, are all acquisitions. Mrs. Fottler has not fulfilled its promise.

S. B. Dana, a "brunette," is a market variety, an early, free bloomer of distinct color. Henderson's Mrs. Humphreys, small white, and Harris' Snowball, are synonymous. Baronald is in the way of Moseman, but more full. Geo. Atkinson, fine white; Llewellyn, Indian red, thin but distinct; Mrs. William Barr, wide petals, deep red with blue-red reverse, comprise the best of Spaulding's set seen.

The English kinds, as usual, comprise some good novelties. Sunflower is one of the best of the new yellows, an immense flower of light appearance. Mrs. Walters, a sport from Edward Audiguier, and one of the darkest of Chrysanthemums, is a first-rate sort of largest size. Mrs. F. Jameson, a brunette, and Stanstead White, of peculiarly neat form, are all promising, though on weak plants they were not in first-rate form. Mrs. Haggas is the latest sport from Mrs. Heale, a charming, soft

yellow Chinese incurved. Violet Tomlin, a sport from Princess of Wales of the same section, has fine form, but is of that distressing color known by florists as violet-rose. C. Orchard, after the fashion of Mrs. Wheeler, is an exhibition flower of largest size. Mrs. J. Wright, a large, deep and graceful white, is a first-rate addition, and one of the best of the season.

The French still produce annually a great number of fancy kinds, many of which, if poorly grown, can scarcely be distinguished from each other, but every year adds a few very good ones. The most promising here are Madame Edouard Lefort (Del.), a very deep maroon, with gold reverse and ends of petals laciniated and laced with gold, in the way of Macaulay; M. Bourgignon (Del.), a purple-red reflexed, silver centre; Compte de Mun (Del.), cream and white; F. Marrouch (Aud.), yellow; M. J. N. Pigmy (Aud.), a white Soliel Levant; Madame Lay (Aud.), carmine-rose; M. Bernard (Brt.), violet-amaranth.

Mr. Spaulding has a great number of seedlings, the most promising of which has been named Ada Spaulding, a very solid sphere of white, shading to pink on the lower petals. The effect of a well grown flower is that of a large Pæony, though it is well incurved and belongs to the Japanese section, not being so closely imbricated as the typical Chinese. As grown here, the second season, in all forms, it appears to be a variety of great merit. This flower was awarded the Harrison Cup at Indianapolis, November 5th, as the best American seedling not yet introduced.

E. G. Hill, a fine yellow, flamed with red on its lower petals, will be fine if it retains its character. I fancied, among a great number, Cyclone, a white R. Crawford; 770, a bronze copy of same, 789, a very full Mrs. Wheeler; and Zenobia, a large white with wide petals. It would be interesting to know if, among original species from which our hybrids have been obtained, there is a scented one. Otherwise it is difficult to account for the appearance of an occasional variety with a decided perfume. A little lemon colored Pompon seedling here has a most pronounced odor, in the heat of the sun quite overpowering. Mr. Spaulding has fixed a white sport of Mrs. Gerard, which he has named Marie Ward, a most exquisite flower of distinct form. I noticed here one feature of very great interest to growers—the culture of the main crop in wooden boxes six feet long, a foot wide and a foot deep, such as are used by Rose-growers. Six plants were grown in each box, and were in excellent condition. Of course, such boxes require much less care and are less expensive than pots, more rapidly shifted into the houses, and in every way more convenient when the plants are grown for cut flowers for market in large quantities.

Orange, N. J. *G.*

Recent Publications.

The Genus Masdevallia.

A *Manual of Orchidaceous Plants Cultivated Under Glass in Great Britain*, by Messrs. James Veitch & Sons, Chelsea.

A fifth part of this very useful work has just been issued, and is devoted to those charming little plants, the Masdevallias, and a few closely allied genera. Few other groups have increased so rapidly during recent years, and the available information is so widely scattered that the work will be welcomed by cultivators and others. And it is not too much to say that the same high standard of excellence which has characterized the early parts of this work is here fully maintained.

Masdevallia was established by Ruiz & Pavon, toward the end of the eighteenth century, for a single Peruvian species, which, strangely enough, is unknown to modern science. In 1832 Lindley enumerated three species in his "Genera and Species of Orchidaceous Plants," and thirty years later the number had only increased to thirty-six. At the present time, through the discoveries of travelers on the upper slopes of the Andes, 125 species is said not to be an exaggerated estimate of the numbers. Some of these are not in cultivation, and others have but little claim to be cultivated for ornament; but we notice that the selection given by Messrs. Veitch numbers some sixty species, exclusive of hybrids.

A large amount of useful and interesting information is given as to the homes of these plants and the conditions under which they grow, and from it the following is condensed: Masdevallias are alpine plants, having their homes on the mountains of tropical America. They grow in a variety of situations—on the ground, in the crevices of rocks, on the trunks and branches of trees, and even on the roofs of buildings, but always where there is but little soil, or where there is but a small accumulation of vegetable matter. They first appear on the Peruvian Andes, about the fifteenth parallel of latitude, and extend as far as the mountains of south Mexico, being most numerous in New Granada; while a few outlying species are found in the mountains of Brazil and Guiana. Some of them occur within the Odontoglossum zone, but usually they are found at a higher elevation and above the limits of the forests. In round numbers, they may be said to occur between the elevations of 6,000 and 13,000 feet, a few of them ascending to near the snow line. In these elevated regions the Masdevallias live under very different climatic conditions from those under which they are cultivated in Great Britain, owing to the greater rarity of the air, its diminished capacity for absorbing aqueous vapor, and other local causes; nevertheless, their culture is not attended with any special difficulties.

Several features of interest present themselves on glancing through the work. Take *Masdevallia Chimæra*, for example, where we note that no less than six Reichenbachian species are reduced as varieties of one polymorphic species. Seven varieties are admitted, but we read that "there are other Chimœra forms in cultivation, named and unnamed, so intermediate in character that they may with equal right be referred to either of the two between which they stand."

"The habitat of *Masdevallia Chimæra* is restricted to a comparatively small area on the western Cordillera of New Granada, extending from Frontino, near Antioquia, to a few miles southward of that town. Its vertical range is from 4,500 to 6,500 feet; it grows chiefly on trees and shrubs, preferring the forks of the branches, where there is a small accumulation of decaying vegetable matter, and where there is shade and moisture. In those localities in which *M. Chimæra* is most abundant the atmosphere is always at or near the saturation point, and fogs and mists are almost of daily occurrence for more than nine months of the year; but at the higher limits of its range, where these hygrometric conditions are less pronounced, the plants are much less vigorous, but flower more freely; the leaves are swollen and more leathery, the flower-scapes shorter and erect, and the flowers are smaller in all their parts."

Masdevallia coccinea, "a charming thing, with flowers as red as a soldier's coat," is a name which has been floating through the books like a ghost, without any one knowing what it really stood for, and consequently we read with interest that the plant has been identified, and is none other than *M. Lindeni*: of which *M. Harryana* is supposed to be only a variety. The confusion seems to have arisen through the true plant being first confounded with *Masdevallia militaris*, and then with *M. ignea*, and those who would read the history of this confusion should refer to the pages of the *Gardeners' Chronicle* for August 31st last, where the matter was sifted by Mr. Rolfe, of Kew. And so it appears we must write *M. coccinea* for this showy species, whose flowers vary from a deep, rich crimson-purple, through magenta-crimson, crimson-scarlet, scarlet, orange and yellow to cream white.

"Its principal locality," we are told, "is on the eastern Cordillera, between Sogamosa and Concepcion, where its vertical range is 7,000 to 10,000 feet; it is particularly abundant on that part of the Cordillera called the Sierra Nevada de Chita, where it spreads in uninterrupted masses for miles, covering acres upon acres of the upland slopes, growing in the partial shade afforded by the low shrubs that abound in the place. When in bloom these masses of Masdevallia present one of the most striking floral sights it is possible to behold, even in tropical lands."

These extracts will afford a glimpse of the valuable information to be found in the pages of the work. One of the illustrations calls for a remark—and, by the way, the same or a very similar one has appeared in the pages of the *Gardeners' Chronicle*. It is *M. racemosa*, with fourteen flowers, all expanded at the same time, and as three is the highest number seen in cultivation, we cannot but think some mistake has been made. The raceme certainly goes on lengthening and producing new flowers, but these are borne in succession, not synchronously. We recently saw a dried specimen which had been carefully glued to a sheet of paper, and which exhibited all the flowers of the raceme expanded at once; but the most cursory examination showed that the flowers had all been carefully attached to an old raceme. The moral is self-evident.

Notes.

Mr. C. L. Allen sends to this office a fruit of the Chinese Quince weighing considerably more than a pound. The flesh is dry, bitter and puckery, but the odor of the fruit is delightful.

A new Veitchian hybrid Cypripedium, not yet in commerce, to be called T. B. Haywood, is now flowering for the first time in America, in Mr. Ames' garden at North Easton. It hardly seems very distinct, or superior to many of its predecessors.

Lydia W. Shattuck, who recently died at an advanced age, had been teacher of botany in Mount Holyoke Seminary for no less than forty-one years. To the interest attracted by her teaching was largely due the founding of Williston Hall and its scientific collections.

In the article entitled "A Destructive Cornel Saw-fly," on page 521 of this volume, at the fourth line of the second column, the phrase "in the imperfect and mature stages" should be transposed so as to read "which, in the imperfect and mature stages, attacked and destroyed many larvæ."

A new variegated form of the east Asian Hercules' Club (*Aralia Chinensis*), the leaves broadly blotched with yellow, in the exhibit of the Associated Nurserymen of Boskopp, will be prized by people who are interested in plants with abnormally colored foliage—a class with which our gardens seem already sufficiently supplied.

A correspondent in California sends us a specimen of cork two inches thick, taken from a Cork Oak planted at San Gabriel twenty-eight years ago. The specimen is a part of the third crop produced by this tree. The prospect that the cultivation of the Cork Oak will become a large and profitable industry in some parts of California is excellent.

Abies subalpina, a native of the forests of the Rocky Mountains, where it is found growing only at high elevations, still remains one of the rarest of the American conifers in cultivation. It may interest the cultivators of such plants to know that a considerable stock of well grown young specimens of this species can be found in Mr. John Waterer's Nursery, Bagshot, England.

A personal letter from the Director of the gardens of the Villa Thuret calls attention to the value of *Lippia canescens* as a permanent lawn plant for California and similar dry regions. This plant spreads by means of prostrate stems, and is not affected by the hot, dry summers of Provence. M. Naudin will distribute a few seeds to Californians who may desire to experiment with it.

Mr. S. B. Parsons writes that no shrub on his grounds excels our native *Itea Virginica* in the splendor of its autumn colors. Even now, after the leaves have fallen from nearly every other shrub, they are still abundant on the Itea, and of a solid crimson color. This shrub also has the merit of blooming in late June and July after the mass of shrubs have passed their season of flowers.

Secretary Rusk, in his report just issued, urges upon the government the duty of assuming a more definite supervision over the forests of the country, or, at least, over such forest-areas as are owned by the government, and occupy positions of importance in the regulation of the water-flow and other climatic conditions. At present, he adds, we are without definite knowledge of the extent, location, condition and value, direct or indirect, of the forest property now in the hands of the general government; much less do we know of the forest condition of the country.

Plants of the European Spindle-tree (*Euonymus Europæa*) are remarkably fine this year in the neighborhood of Boston. This species, of which a number of varieties are in cultivation, attains the size of a small tree. It is perfectly hardy, the habit is good, the fruit is abundant and conspicuous, and the leaves late in autumn assume a brilliant scarlet color, which contrasts agreeably with the red and rose-colored fruit. The European tree far excels its American relatives in the brilliancy of its autumn coloring, which, perhaps, is not surpassed by that of any other European plant.

It is not, perhaps, generally known that *Parrotia Persica*, a tall shrub from the Orient, related to our Witch Hazel, is perfectly hardy in the northern states. This plant has long been valued in European gardens for the brilliant yellow tints the foliage assumes in winter, and in this country, even where bright-colored autumn foliage is the rule rather than the exception, Parrotia is well worth cultivating for the display of color it makes during the first week of November. There is a second species, *P. Jacquemontiana*, a native of Cashmere, which has probably not been introduced into the United States.

Lincoln Park, in Chicago, contains St. Gaudens' admirable "Lincoln," and not far away from it stands Mr. Boyle's group of Indian figures called "The Alarm," an interesting if somewhat immature work, far above the average of the figures which people our eastern parks. To these has recently been added a third statue, said to possess unusual artistic merit. It was given by the Honorable Lambert Tree, formerly our minister to Belgium, and was executed by the Belgian sculptor, Jacques de Lalaine. It represents La Salle. The figure is bronze, of heroic size, and shows the explorer in travel-worn garments, standing with one foot on the prostrate trunk of a tree and gazing earnestly toward the south-west.

Gardeners rarely select herbaceous plants on account of the autumn colors of their foliage, and there are not many plants which belong to this class which are distinguished in this particular. A notable exception is the Japanese *Lysimachia clethroides*, the leaves of which are colored during the first ten days of November bright orange and scarlet. This is a handsome and a perfectly hardy plant, well worth a place, too, in the garden for its long, one-sided, curved spikes of white flowers, which are nearly half an inch across. It grows to a height of two to three feet, and its only drawback is that it grows too vigorously and spreads too rapidly by its underground stems. It is not easy to eradicate it from a garden when it is once fairly established.

All the monstrosities in the way of "floral decorations" with which our pleasure-grounds are deformed, we too commonly credit to the gardener in charge, forgetting that he is employed by others, and may possibly but execute their definite biddings. According to a letter in the *American Architect and Building News*, great injustice is done to one executive at least. Speaking of Jackson Park he says: "Here Garfield, made entirely of Cacti, reposed one year; here the lamented Jumbo, made of exactly the same material as the President, bristles each summer; and not far off, a gentleman on a bicycle, a loving couple in a boat, a sun-dial, a calendar, etc., bloom and flourish. The head gardener has very recently published a protest in an agricultural paper against these abominations; but how can he dispense with them when people enjoy them, children cry for them, and the Park Commissioners insist on having them?" Undoubtedly the same influences control many other parks all over the country, and it is time that the gardener should be relieved of a portion of the obloquy and that the public should be told where the responsibility rests.

Robert Douglas & Sons, of Waukegan, Illinois, have just signed a contract with Mr. George Vanderbilt to make a plantation of trees on his estate near Ashville, in North Carolina. About 1,000 acres are to be planted eventually, although the present contract is for not less than 300 acres, to be planted within twenty-four months. Twelve hundred trees are to be planted to the acre, the planters agreeing to cultivate them during two years, and to deliver at the end of that time not less than 1,100 trees to the acre. White Pines (*Pinus Strobus*) are to be planted principally, with four per cent. of Douglas Fir, as an experiment, and a few deciduous trees will be mixed through the conifers. Plants from twelve to eighteen inches high will be used. Mr. Douglas, who is on the ground giving his personal supervision to preparing the ground, proposes to plant fifty or a hundred acres this autumn for the purpose of testing the possibility of late autumn planting. Mr. Vanderbilt's experiment is an important one, and will be watched with interest. This is, without doubt, the first attempt at tree-planting on so large a scale which has been made in the southern states.

Monsieur André describes in a recent number of the *Revue Horticole* the new hybrid, *Hypericum Moserianum*, which attracted much attention this summer at the Paris Exposition, where it was one of the most interesting of the newer hardy plants shown. It was obtained by Monsieur Moser, of Versailles, by crossing *Hypericum patulum* with *H. calycinum*. The hybrid unites the qualities of the two parents and is considered superior to them both. It is a shrub three to four and a half feet high, with numerous upright branches gracefully arching above the middle. They are round, at first red, but eventually turn green, and are covered with oposite, entire, subsessile, oval, obtuse, opaque leaves, which are dark green above, paler and glaucous on the lower surface, and from one to two inches long by half an inch wide. The inflorescence is terminal, simple, or with three flowers which are an inch across, with a spreading, slightly cup-shaped corolla, of bright, clear yellow, concave petals, and purple stamens. The hybrid might be described as a tall growing, large flowered *Hypericum patulum*, resembling *H. calycinum* in the size of its flowers and in the texture and arrangement of the foliage. *Hypericum Moserianum*, if it proves hardy in this country, as there is every reason to believe that it may, will make an interesting and valuable addition to our list of hardy summer-blooming shrubs.